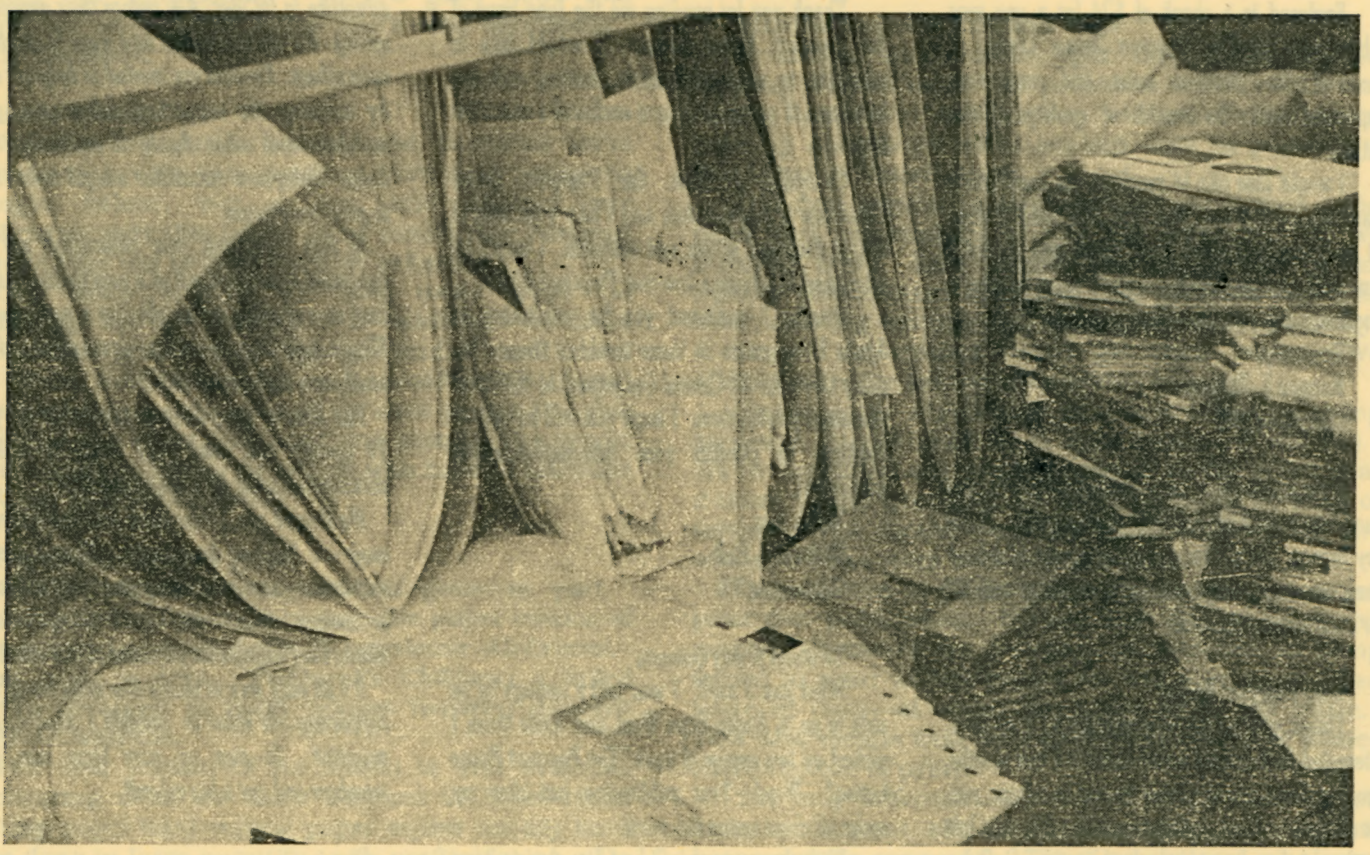
Organize that file system!



A messy desktop (above) might be a sign of genius, but a cluttered computer desktop is just an accident waiting to happen! Take a look at the suggestions we present for taming your file system in the article "The Great Disk Drive—Part 3: The File System Level." It starts on page five.

THE PASSPORT HOUSE LETTER

Journal of Apple II Development • August, 1993

In this issue:

The Passport House Mailbag
- Letters from Readers
- Contact information

The Editors' Letter
- Issue Details
- Paper *A2-Central* gone
- The Passport House Catalogue
- Printer problems finally over

Product Test Drives
- We examine Universe Master 1.1, a complete disk management utility from Econ Technologies.

The Great Disk Drive
- In this third installment, we look at the file system level: how organization can prevent a lot of disk problems.

The Passport House Catalogue
- A sound offer for IIGS users
- The Readers' Listings
- Details from F-Volume

New Product Reports
- New Apple II and IIGS System Software
- ByteWork's 6.0.1 Developer Updates
- "Addressed for Success" & X-Drive
- Plus: MegaBuff, TypeSet & SAP 0.7

The Late News
- Floptical Clarifications
- Pointless and System 6.0.1
- A KansasFest report from Lunatic E'Sex

End Notes
- Apple waffles & OS for the really needy
- Quality Computers' "Works 4.0" upgrade

The Passport House Mailbag

Passport House,

Enclosed is a check of $24 for a one year subscription to The Passport House Letter. I received the Premier issue and was very impressed with the wealth of quality articles within.

I would also like to purchase the back issues that I missed (i.e. Feb, Mar, Apr, May, Jun). Please let me know how much back issues cost so that I can send another check. I don't want to miss a single issue of your excellent magazine.

Sincerely,
Norman L. Jaojoco
Cincinnati, OH

New subscribers get a packet of our current back issues to kick off their subscription. If, for any reason, you'd like a copy or copies of a back issue, you can send a request to us along with $2 for each issue requested.

Dear Passport House,

Thank you for the free newsletter. I've been interested in it since I heard about it a few months ago, but have never gotten around to asking you for a freebie. Your publication fills a big void left by the demise of some other publications (inCider and A2 Central). I've enclosed a check to begin what I hope is to be a long term relationship.

I'm also interested in purchasing a floptical drive as mentioned in the June issue. Let me know when you'll have one available. Thanks for your efforts in truly keeping the Apple II forever!

Yours Truly,
Ed Wojciechowski
Bloomingdale, NJ

Dear Sirs,

Thank you for sending me the June issue of the Passport House Letter. I would like to subscribe to your publication, starting with the July issue, if possible. I have enclosed a check for $24.

Secondly, I think the Passport House Catalogue is a great idea, and I like your idea of selling Floptical drives and software. I would be interested in buying a low-cost Floptical drive.

Finally, I commend you for publishing an Apple II magazine in these troubled times. We many now add A2-Central (on paper) to the list of deceased publications. I hope you will be able to continue to publish your information-packed newsletter.

Thank you,
William R. Hall
Gloucester, VA

To whom it may concern,

What can I say?! I was lucky enough to be able to go to Apple Expo West, and while there, I picked up two copies of your "The Passport House Letter." Wow! Your publication just blew my socks off clear across the room!

With the news of inCider/A+ closing down in June, publications like yours will mean a lot to Apple II owners. Might I humbly suggest that you take out a small ad in the last issue giving subscribers a chance to subscribe to yours?

In any event, please find enclosed my money order for $29US for my subscription.

Apple II Forever! Yours Truly,
David Lewis
Schefferville, Quebec

Unfortunately, we didn't have time to advertise in inCider/A+ before their demise this spring. We are looking for new ways to reach new subscribers. Readers are invited to help our cause by enlisting the support of fellow user group members and other Apple II enthusiasts they know. Every new subscriber we get means funds to print more pages.

In fact, right now, new subscribers are very important to our survival as a publication. And to find new readers, we're offering a cash reward. That's right! Sign up a friend or neighbor and we'll send you a cash refund of $5.

The offer is good through the end of the year. To qualify, just send your name in with the subscription order for a new subscriber.

We'll send you $5 for each new subscriber you snag—no limit on how many. There's just one restriction: new subscribers must pay with check or money order (we can't accept Visa or MasterCard charges for payment in this offer).

It's an easy way to earn a few extra bucks while supporting our effort to publish a great Apple II monthly! So sign up your local user group members and get a big refund!

Dan,

I have just received yesterday the back issue set of the Passport House Letter. While I obviously did not have the time to read all the good stuff you put in, I did browse them, and they look very nice. I am looking forward to read it every month.

Thanks,
Philippe Manet
France, via GEnie

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Miles City, MT 59301-0145

GEnie **D.DILGER**

Internet: **phletter@delphi.com**

THE PASSPORT HOUSE LETTER

Journal of Apple II Development • August, 1993

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BACK ISSUES & OTHER INFORMATION

The Passport House Letter has been printed regularly since our premier issue of January 1993. If you are interested in obtaining back issues, please write us. The Premier January 1993 issue is no longer currently in print. Our "regular address" appears in each issue on page two, with any current public Email addresses available. Please feel welcome to contact us with any suggestions, problems, news or other corrospondence. Due to the volume of mail we get, we can't always reply directly, but we do consider all mail and appreciate any comments from our readers. Email is the most effective way to contact us.

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Information published in this journal is, to the best of our journalistic abilities, truthful fact. Any humorous parody that may find its way into print is clearly separated from our factual information. Although Passport House closely reviews all material appearing in this publication, IN NO EVENT WILL PASSPORT HOUSE, ITS WRITERS OR CONTRIBUTORS, BE LIABLE FOR INCIDENTAL, DIRECT, INDIRECT OR CONSEQUENTIAL DAMAGES THAT RESULT FROM ANY INACCURACY IN THIS PUBLICATION, BEYOND THE PRICE PAID.

The Editors' Letter

Welcome to our August issue—and thanks for reading our publication. There's good news this month for all sorts of Apple users and developers. Enjoy the issue.

Issue Details

We've pretty much resolved the problems we've been having with our printing company (more on changes below), but it has still affected our publication date this issue. Next month The Passport House Letter will be fully back on schedule.

Our main articles for this issue focus on organizing the file system. In addition, we have several new products to highlight and a lot of news, too. We've printed a report on KansasFest by Lunatic E'Sex—unfortunately none of us were personally able to attend the event (too poor, too busy). The report gives a great rundown for people who haven't attended an Apple conference before.

Paper *A2-Central* gone

Another Apple II magazine is gone—in part. Resource Central decided to drop the paper version of their general interest Apple II newsletter *A2-Central*. Along with it goes *Fishhead's Children*, a failed startup designed to build bridges between different computer systems.

The disk version of *A2-Central* is still available (duplicating disks to meet demand is easier than printing paper hard copies; paper copies usually have to be done in large quantity to be profitable), so all is not lost. This turn of events leaves our *Passport House Letter* as the only general interest, international monthly Apple II publication available.

Being alone in that market niche is kind of lonely—we really appreciate the supportive comments readers are making. As long as readers keep asking for our *Letter*, we'll keep publishing it. Be certain that your support is vitally needed—and much appreciated.

We ask that our readers recommend our *Letter* to anyone they know who might enjoy reading our work. In fact, we've set up an incentive plan (detailed in the Mailbag department (<--over there) and referred to in the Catalogue (over there-->) to encourage current readers to help us find new ones. The tremendous expense involved with finding new readers is one thing Resource Central noted as being the downfall of *Fishhead's Children*. We don't want that to happen here—please help.

The Passport House Catalogue

Well, it's finally here. Page seven premieres the first installment of our Catalogue. We've changed things around a lot and added a new service—free 'classified-esque' listings for readers to advertise items to buy, sell and trade. We hope the service will assist our readers—especially ones without access to online services—find both buyers and items to buy.

In addition, we're planning to publish unsolicited plugs in the Catalogue for small developers. If you'd like to recommend a great small company or independent developer for us to profile, send us a postcard with details. This month we're reporting on work in dimensional sound and other perceptual sound and music effects pioneered by Dr. Tom Turley using the IIGS' Ensoniq digital oscillator sound chip.. Check it out.

Printer problems finally over

It seems we've finally got our difficulties in printing worked out. The problems weren't with our Apple II printer, but rather with the commercial printing companies we've worked with in publishing *The Letter* for distribution.

Our first regular printer doubled our agreed upon price and expected us to pay the difference—so we dumped him. Last month was published by an equally incompetent company that fumbled our mail work, causing considerably more grief than necessary. A handful of readers didn't get their issue. We apologize for the inconvenience this caused.

Please note: if you ever have a problem receiving an issue, please send us a note (postcard will do). We've simplified our mailing system to the point that if there is any problem, it's likely going to be kind of serious. The sooner we know what went wrong, the sooner we can work to fix the problem.

Our solution to printing was to change the way we print this publication. We are now able to print any number of issues on demand—as opposed to being forced to print all the copies we will ever need of an issue at once—at about the same price per issue. This also means that we can reprint copies of issues currently out of print.

The only difference our new printing method will make to anyone else is that printing in color will become more expensive. Thus, advertisers who want to print in color will have to pay bit more. On the flip side, our new process print system means we've been able to lower our standard advertising prices considerably—and still stay in business.

We hope our new lower advertising prices will make our publication more attractive to advertisers, and more in line with the budgets of small developers.

We sell advertising space in full pages (8.5" x 11") and half pages—either tall (4.2" x 11") or wide (8.5" x 5.5") formats. A full page is $99 and a half page (in either format) is $69. If you buy more than one ad, you get a discount: additional full pages are only $79 and half pages are $49. It's really simple.

Layout your advertising as you'd like it to appear—a laser printed sheet will look great. Have a photoshop make PMTs of any photos you plan to use.

Send your ad along with a check or money order for payment by our deadline date of the issue you want your advertising to appear.

Deadline dates to the end of the year are: September (issue) is due August 16; October is September 13; November is October 11; December is November 15 and January 1994 is December 13.

Next month's September issue is of special interest because we will be sending free issues to educators and schools. Help us reach your school! Send us a postcard with your local school's name and address and we'll send a free issue for their perusal.

A special article on making practical use of Apple II computers will target schools and educators and provide help in finding sources of Apple II support and service.

Universe Master 1.1

D. Proni
Econ Technologies, Inc.
P.O. Box 195356
Winter Springs, FL 32719
(407) 365-4209

Disk Management Utilities

Stand alone application
System 6, 1.5 MB
$89.95 Street price

Universe Master is a disk utility package for the IIGS. It integrates data backup, file recovery and drive maintenance into a single application that takes special advantage of new features in System 6 (and requires System 6 to operate).

UM is designed to be easy to use—after all, if doing maintenance work on your drives isn't easy, you probably won't do it as regularly as you should. The program's interface is advertised as being very intuitive and simple to use, so we'll start there in our examination.

Window to the Universe

When UM starts up, it displays a full-screen window that comprises the heart of the program. Across the top right of this window is the volume region, which displays all of the volumes currently online as named icons, in the same way as the Finder.

Below the volume region is the map view area. When you select a drive from the volume region list, UM displays the drive's directory map, a tree of its folders. A folder or group of folders (a folder branch) can be selected on the map by clicking on folder names.

On the opposite side of the window are eight command buttons, each an icon that performs a given function to folders selected in the directory map. The buttons allow you to **Copy** or **Delete** a folder or branch; **Restore** folders from a previous backup or **Recover** deleted files; **Catalog** files appearing in selected folders, provide detailed **File Info** on them and**Print** listings of files and folders as well as create a script to **Backup** a folder or branch. We thought this last button was confusing, for the following reason:

The Backup button doesn't perform a backup, but rather is used to generate a script, a file that describes the backup to be made. Once you've made a script, you execute it by choosing "Backup..." from "Scripts" in menu bar to perform the actual backup.

A button title like "Design Backup" or "Make Script" would lead to a more direct idea of what the button does, and differentiate between the actions of the "Backup" button and "Backup" menu bar selection.

In all, however, the main window provides easy access to UM's basic functions in an intuitive way: simply select the folders you want to work on and push the button that describes what you want to do to them.

Extended functions

Besides keeping simple tasks simple, UM gives users access to powerful maintenance functions and low-level editing tools. These additional functions are all called from the menu bar. Most of them deal with volumes as a whole, rather than an individual folder or branch of folders.

On the maintenance side, UM provides "Verify media", which checks for damage or defects on the drive itself and offers to mark any bad blocks that are found.

The "Validate file system" option scans for erroneous folder entries, damaged file structures and "orphaned" files that have been lost due to folder corruption. It too offers to fix any damage that is found.

"Zero unused blocks"—an operation Econ recommends be done regularly—cleans up unused portions of the drive. A clean drive makes accidently deleted files easier to restore.

As for low-level functions, UM allows users to view and modify folder entries. Viewing folder records is educational, but editing them can be dangerous to your data if you make a mistake; in any case, UM warns you of what you're doing. UM also supplies an easy-to-use block editor to view and modify the actual files on a disk byte-by-byte.

The function "Rebuild volume" offers to reconstruct volumes with damaged boot blocks, volume header or root directory. These repairs can, in many cases, save damaged disks with their data intact.

One last function UM promises is "Optimize." This remaps files on your drives in sequential order, making read and write operations more efficient and thus faster. Optimize is not included in the current version of UM, but current users are promised an upgrade including optimize when it becomes available..

Put to work

UM offers a lot of worthwhile functions, but just how well does it work in real operation? Over the last few months, we've been putting UM to task to find out. UM performed well throughout our testing. It does have some problems with canceling operations, but for the newness of its release, we were impressed with its stability and crash resistance.

We can report that UM has isolated and corrected a variety of minor errors present on out hard drives, doubtless saving more serious problems in the future. UM's drive verify and validate functions catch many more errors than the like-named functions in Apple's Finder—in addition, unlike the Finder, UM will attempt to fix the problems it finds. Just having the utilities available makes you feel safer—especially when you realize you've just erased files you didn't intend to or a drive reports strange new error codes.

UM's backup functions are designed to be really easy to use; just select a section of folders to backup, push a button and designate the criteria you want. You can set it to backup all files in the selected folders, or just ones that haven't been backed up in a certain number of days or grown by a certain extent. Backups can also be compressed and password encrypted. Once these criteria are set, UM generates a backup script. Scripts can be run either from UM itself or by double-clicking on a script from the Finder.

For first time users, the process may be confusing, primarily due to the presentation of the process. When you want to do a backup again, you don't press the big backup button. Instead, find the script created earlier and run it. But to restore files from a backup, you do go to the command buttons: selecting the restore button presents a listing of scripts available to restore files from.

Passport House Catalogue

New Listing Service

Would you like to buy, sell or trade Apple II related merchandise? Let us list it for you—we'll do a short listing for free (15 words or less; for more than that, send $5). Jot your brief message on a postcard. We'll print it here in the Catalogue for all our readers to peruse, and relay any interest to you. Remember to send your name and a way to contact you (telephone or Email).

Listings for August

Box A

Want to sell a PC Transporter? I might be interested if price is right.

Box B

Looking for a used A2 Video Overlay Card to purchase. U want how much?

Respond to PHL with a postcard or via Email. Please note Box ID and month.

A sound offer from 1 World Software Wizard Dr. Tom Turley

Dr. Tom Turley is an executive coordinator of the 1 World Software Wizards programmer association (profiled in last month's Late News). He's been involved in the field of sound engineering and design for 25 years, studying psychoacoustics, physioacoustics, geometricacoustics and the harmonics and "inductive uplifts of universal sounds," the "hu, om and avm."

While quite a lot of Turley's explanations and descriptions of audio science go wizzing past our understanding, his work is something anyone can understand. Just listen to it.

Turley has taken his expertise in sound and applied it in working with the IIGS' Ensoniq sound chip. He says he's seen a lot of computers, but is so fascinated with the IIGS's sound capabilities that he plans to work on it for years to come. In association with other members of the group, Dr. Tom has released a series of "NTV" demo disks designed to play specially processed song files. NTV stands for NoiseTracker VAMPS (vortex audio mastered psychoacoustic sound).

Songs on the disk may have originated from NoiseTracker, SoundSmith or foreign system MOD files, but after having their individual instrument samples remastered and undergoing "digital audio transmutation" and "contripetal convolution" processing, they take on an entirely different character. Beyond the big words, the sound is highly dimensional and very real.

Turley even offers to remaster your own songs. Send him SoundSmith, NoiseTracker or MODs on an 800K floppy with $5 for up to 4 songs. He'll process them into VAMPS Modules and return your disk as a self booting NTV jukebox. Currently, NTV modules only run in the jukebox and only under Fastboot-FreeOS, a special operating system—you won't get the same effects under GS/OS or ProDOS, or using another program.

In addition, Turley offers to record NTV modules onto cassette tapes. Turley records modules with VAMPS processing and both vertical and horizontal soundscapes—up to 651 spacial soundscape directives and total global vortex sound illusions.

"The listening experience is the most astounding event your ears will encounter," Turley says. "It surpasses anything you will ever hear thru any computer, even the IIGS, although this procedure uses the IIGS to achieve its astounding effects!"

The service is only $5.00 per tape, including postage and handling. Send a high quality tape and music files on an 800K disk. Turley also supplies technical information on audio science; for details, write:

Charles T. Turley, Ph.D.
Omnisoft Sound Research Lab
115 Santa Clara Street
San Fransisco, CA 94005-1736

Who says there's no money in the Apple II?

There's at least a little bit in it for you as a subscriber of our publication! Help us find Apple II users. For each person you sign up, we'll give you $5—with no limit.

It's worth it to us to reach new Apple II people. And it's easy for you—just send in your name with subscription orders (check or money order only) for new subscribers.

F/Volume

presents a new standard for

The Apple II

There's nothing new about the floptical. But its 20 MB format makes it ideal for sharing massive amounts of data. And who better to share wealths of data with than fellow Apple II users?

We're designing a series of floptical volumes full of digitized sound files, NoiseTracker, SoundSmith and MOD music files, fonts, 3200 color pictures, GIFs and clipart and lots of shareware games and utilities.

Within the next couple months, we'll have an array of F/Volumes available for purchase. Floptical media cost about $25 each. You'll have the option of paying a deposit for the value of the media or sending us your own floptical disks to use. Beyond that, we've set the F/Volume price at $9.95 each, or $7.50 when you order at least five F/Volumes at once.

That's a large savings over getting software on standard 800K disks—3.5" disks are usually $5 a piece, for less than one twenty-fifth the material! And F/Volumes offer the convenience of having all of your files available at once—no constantly switching disks.

Unlike CD-ROM, you can modify files on F/Volumes and save them back to the disk. In addition, you can copy off the files you want to your hard drive and reuse the floptical disk for file backups—or anything else.

Floptical drives are comparable to CD-ROM readers, with the exception that the smaller floptical drive can also read and write standard high-density ProDOS, Macintosh and IBM floppy disks. It's a great investment.

Get into floptical!

F/Volume is coming soon

Another limitation of UM's backup procedure is that backups can only be made to one volume; they can't span several. That means that unless you have a larger-format removable drive like a SyQuest or Floptical, you'll have to split up large volumes you want to backup and make separate scripts to backup separate folder branches on different disks. You can't backup anything larger than the format you're backing up to—especially a bugger for anyone with large files, as UM doesn't offer any means to break up files for backup on more than one disk.

One last thing to beware of when using UM to perform backups: if you backup a volume with compression, UM will try to compress any Finder.Data files it comes across. These invisible files are put in every folder opened by the Finder. They record information the Finder uses to display the window of icons that appears when you open a folder. While UM can't compress the file (they are already as small as they're going to get), it does mix it around in an attempt to do so. If you try to open a folder of compressed files, the Finder stumbles upon finding the garbled Finder.Data file. UM should know better than to try to compress files of that type.

Recommendations

Is UM for you? We definitely believe hard drive users shouldn't be without it. UM combines a variety of very useful functions into a single program for convenience. It works well. And importantly, is well supported. Econ has made a large commitment to the Apple II, and UM proves they are working hard at it. For users without a hard drive, UM is another reason to get one. In fact, by purchasing a hard drive from Econ, you'll get an installed copy of UM free.

Previous articles in this series have discussed choosing the kind of drive that's right for your system and getting it to work with your Apple II. But even if you've got your new drive working, it may not be working effectively. Organizing your data will improve the way you work. Finding your files will be easier, and you can even reduce the risks of data loss.

Articles in this series are designed to complement each other. In each issue, we build another level on the discussion. The series isn't designed to be a technical reference, but a guide in understanding storage media devices. So jump aboard and hang on in...

The Great Disk Drive

Part 3: The File System Level

On the file system level, we'll take a look at the operation of ProDOS—the Apple II file system—as well as practical data organization and simple maintenance you can do to ensure data integrity.

Understanding the File System

Apple's computers, like many computer systems, are built on the concept of an electronic desktop. On the desktop, you launch application programs to create or modify documents. To save a copy of a document, you put on a drive in a folder or maybe deeper, inside a number of folders. The interface is designed to make the computing environment familiar to an office environment.

When something goes wrong however, the electronic desktop gives evidence that it isn't really that similar to the stable, familiar office. Folders may disappear, losing their entire contents. Document files may refuse to be where you put them. To really understand what's going on requires an understanding of the file system.

Electronic Files

In ProDOS, files can be one of 256 main types, from picture files to word processor files to application program files. Yet all files are the same in that they all consist of a string of data; most simply defined, files are just a sequence of bytes.

Unlike audio or video tapes, disk drives don't have to store information sequentially. Because all areas of the spinning disk platter are relatively close together, the read and write heads can deal with finding part of a file here, jumping across the disk to find a second segment, then a third and so on. But imagine a large drive with bits and pieces of files scattered across it—how does the computer sort out where everything is?

The Electronic Folder

By using special files of its own. The file system portion of an operating system plants a file on the drive that provides information about the files stored on that drive; it records file names, file types, the location of the file, its size and other attributes. Rather than scanning the contents of the entire drive to find the files it wants, the operating system reads this directory file.

Early file systems, like AppleDOS 3.3, only had one directory file. This is referred to as a flat file system because all of the files on a disk are recorded into a single main directory. The problem with a flat file system is that if the directory file is ever damaged, there is no way to find the files saved on the disk. All information about the files is gone and impossible to find, as the individual files have no way to identify themselves.

Modern file systems, including ProDOS, incorporate additional directory files, called subdirectories. The main directory file, called the root directory, only contains information about a select number of files assigned to it; other files on the disk are described in subdirectories. All subdirectories are linked together under the root directory in a series of descending levels. The root directory contains information on the first layer of files, including any

subdirectory files. Those subdirectory files list a second layer of files and any further subdirectories. Subdirectories are, of course, folders.

This kind of file system is called a hierarchical file system. Hierarchical file systems provide two main advantages: first, they can organize data into similar groupings and second, any directory file damage will only affect a small number of files.

In a flat file system, you only have to know what disk your file was stored on to retrieve it. Under a hierarchical file system, you'll have to identify each subdirectory level in the path leading to your file—in a word, the file's pathname. This task is simplified on the IIGS and Macintosh, where files are generally searched for in a Directory Dialog Box or Standard Fie, a graphic representation of the information stored in the subdirectory files.

The file system's stability rests upon the subdirectory files. If a subdirectory records a file that doesn't really exist, the operation system will get confused and report an error. If a program tries to write a file to disk and bypasses the file system, it may cover up essential data stored in subdirectory files and trash previously saved data files. How can you safeguard your files from disaster? Take both an passive and active stance to protecting your data.

Passive Preventive Maintenance

One of the easiest things to do is build an organized folder system. Don't store a lot of files in the root directory—it's the most fragile part of the file system. Organize your data into groups of files you use together, rather than just storing them by kind. For example, rather than creating one folder for all of you word processing documents, you might create separate folders for your documents that relate to tax record information, letters to friends, business letters and so on. Don't make yourself search through lists of hundreds of files in each folder; group files into narrow subjects. Your file system should adapt to you, not the other way around.

If you're using a hard drive, partition it into separate-use volumes. (Partitioning will erase your data, so backup your files first). By dividing your physical drive into "logical volumes," you isolate the various parts of the drive from each other. Damage to one partition can't affect another, because each partition has its own root directory and operates like a separate device.

Besides having an organized file system, you should be careful with how you use your drives. Removable drives can wear out quickly. Always use back up copies of your program and system disks, if you work without a hard drive. Don't continue to use floppy disks that report errors. Copy off any information and throw the disk away.

With the IIGS, always shutdown before turning the computer off. Prematurely shutting off the computer may interrupt buffered data from being written to a drive, leaving incomplete files—the first step to a crash. Likewise, it's really risky to use your computer during an electrical storm.

Active Prevention

Besides just being organized and working safe, you can take active steps to avoid data loss. The first step is to back up your data. Keep more than one copy—it's easy cause a problem, do a backup and then be stuck with a backup of the problem. By keeping more than one generation of backups, you can go back a generation and restore your system to the original pre-problem state.

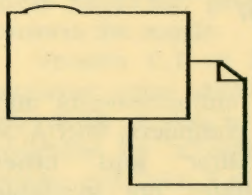
Examine your back up method to make sure it reflects the way you use your data. Don't back up everything equally—focus on your most important data and data that changes. This will maximize the usefulness of your backup archives while taking up the least amount of time.

Validate your disks regularly. Any time a system error is reported, you should validate the disks you are using. Bad blocks indicate damaged media. Again, with floppy disks, that means garbage time. With a hard drive, you can usually mark the blocks and continue to use it safely. Use either a disk utility or reformat the drive (after first saving your data, of course) to repair bad blocks on a hard drive.

Another maintenance tool is zeroing your drive. When you erase a file, the file isn't cleaned off the disk. Instead, the folder (subdirectory file) that recorded the file merely marks it as erased and frees up the blocks the file claimed. Within a short time of using a drive, it becomes cluttered with the remnants of old deleted files. Using a disk utility, you can clean the disk surface to complete zeros. Some utilities can zero just the unused blocks; the IIGS Advanced Disk Utilities offers only to zero the entire volume (so back up your files first.) With a zeroed volume, files that are lost are easier to find with a undelete utility.

On The Level

With some planning, you can effectively reduce your risk of suffering data loss or corruption problems. Taking into consideration how the file system operates is helpful in organizing your system's files. For more details, you might want to research more on the Apple II file system. Read "ProDOS 8 Techincal Reference Manual," part of Apple's techincal reference library.



The ProDOS Folder

What kind of file information they keep tabs on

Every ProDOS file is administered by a "folder" or subdirectory file. What kind of information do these directory files keep track of? Here's a few examples of the data they handle:

• Storage type: This tell the operating system how the file is structured. Folders have their own storage type, as do the new "forked files" used by GS/OS to store two file "forks" (a data fork and resource fork). A separate storage type identifies folders and forked files as structurally different than other files.

• File name: A file's name isn't recorded in the file itself; only the folder has a record of it. That's why folders are so important.

• File type and auxiliary type: There are 256 different main file types, and over 65 thousand (!) auxiliary types of each main type. Among other things, file types let programs share data, as Apple defines and catalogs standards file types.

• Access attributes: Each file has a set of bits that can identify it as being invisible, needing a backup or able to be deleted, renamed, read from or written to.

• Creation and modification date and time: The computer's real time clock stamps each file with this data to assist users in knowing how old the file is and when it was last opened.

Apple II System 4.0.2 and IIGS System 6.0.1
Resource Central
P.O. Box 11250
Overland Park, KS 66207
913-469-6502

System 4.0.2 for the IIe and IIc and System 6.0.1 for the IIGS are now available from Resource Central.

IIGS System 6.0.1 contains many enhancements and bug fixes, including a read-only MS-DOS FST. This new FST requires a drive capable of reading MFM devices, such as Apple's own SuperDrive—requiring the Apple II SuperDrive interface—or a floptical drive, which uses a SCSI interface.

The 6.0.1 Finder incorporates the Mac's "aliasing" concept, where folders, applications or drives can have an "alias" made of them. An alias is a special file that points to the chosen file or device; an alias copied to the Finder desktop can be double-clicked upon to open the parent file or device. The new Finder also incorporates basic keyboard navigation for less mouse-intensive operation.

System 6.0.1 is available from Resource Central for $24, which includes six disks and a twenty-page set of release notes describing the differences between 6.0 and 6.0.1.

A separate package consisting of the six 6.0.1 disks, original 6.0 manuals and new 6.0.1 release notes is available at $39 for users who don't already have the System 6 manuals.

The new ProDOS 8 System Disk 4.0.2 for 8-bit Apple II systems, which contains the latest PRODOS and BASIC.SYSTEM, is available for $14.

Both sets of system software are available elsewhere at various prices and will soon be available online, although they weren't yet at press time.

System 6.0.1 Developer Updates
The Byte Works, Inc.
4700 Irving Blvd. NW Suite 207
Albuquerque, NM 87114

The Byte Works announced enhancements and bug fixes for their C and Pascal compilers, ORCA/M macro assembler, PRIZM editor and other development tools. Seven updates are available separately.

ORCA/C 2.0.1 Update includes the latest tool header files for System 6.0.1 and updates for the C compiler, run-time libraries, PRIZM, text editor and the ORCA shell.

ORCA/Pascal 2.0.1 Update includes the interface files for 6.0.1 and updates for the Object Pascal compiler, run-time libraries, PRIZM, text editor and the ORCA shell.

ORCA/M 2.0.1 Update includes tool macros for 6.0.1 and updates for the assembler, linker, MacGen, run-time libraries, PRIZM, text editor and the ORCA shell.

ORCA/Subroutine Library Source Update includes latest source code for ORCA/M, /C and /Pascal subroutine libraries.

Apple 6.0.1 Tools Update includes the latest versions of Apple's development tools, including new versions of Rez and GSBug.

Programmer's Reference for System 6.0.1 supliments the orignal reference for 6.0, documenting all of the changes in 6.0.1.

System 6.0.1 Boot Disk is for using 6.0.1 on a single floppy system. Hard drive users will want to update with the whole six disk set.

The updates are available from The Byte Works for $7-10 each, with discounts for multiple-item orders.

Addressed For Success & X-Drive
Econ Technonlgies, Inc.
P.O. Box 195356
Winter Springs, FL 32719
(407) 365-4209

"Addressed For Success" is a GS/OS database management package designed to manage larger address lists. Addresses can be entered using the built-in editor, or imported from AppleWorks Classic database files or standard ASCII files.

AFS prints addresses, graphics and postal barcodes on any form of labels or envelopes. Over thirty label templates, covering a wide variety of standard Avery™ label formats, are supplied with AFS.

"Think of it as page layout software with an integrated address database," an Econ represenitive said, adding, "AFS has the ability to paste graphics into its layouts via the clipboard. That is, any graphic you can copy into the clipboard can be pasted into AFS. Graphics are dynamically scaled to match the page settings that you choose from the Page Setup menu option."

The program automates mail and labeling tasks, providing features like automatic return address generation, a 65,000 character memo field, selection by example, bulk sortings and automatic PostNet barcode generation.

Econ says AFS is the "first GS/OS based program to come as a result of the recent expansion of Econ Technologies' programming staff. It is a testament to the firm commitment Econ has made to bring useful, productivity-oriented software to the Apple IIGS."

AFS requires 1Mb RAM and System Software 6.0 or better; the program is slated for availability this summer for $49.95.

Econ's X-Drive is an external unit that houses three SCSI storage devices. The bottom bay comes installed with a hard drive; top bays can mount any 5.25 or 3.5" mechanism, including SyQuest drives, CD-ROMs, DAT drives, M-O drives or any other SCSI device disigned for internal installation. Two 50-pin SCSI connectors and pushbutton ID selectors make the X-Drive easy to connect and configure.

The X-Drive case measures 14 x 6.5 x 5.5," about as wide as a Apple 5.25" drive and standing a little taller than the IIGS. In a press release, Econ said external SCSI hard drives designed to fit under a standard Mac—"large, flat, ugly boxes"—are "typically noisy due to poor fan placement and prone to data corruption when daisy chained together. The X-Drive circumvents these problems by providing horizontal airflow and self contained data connections."

The X-Drive comes with an installed 42, 85, 127, 170, 240 or 525 MB hard drive. Econ will install two

additional devices, including other hard drives or SyQuest 44, 88 or 88c removable hard drives, in the top bays. Econ plans to add CD-ROM drives and other options shortly.

Econ supplies device drivers for the Apple IIe, IIGS and Macintosh computers, and includes a copy of Universe Master with each X-Drive. Universe Master is a IIGS utility that provides a wide variety of disk management functions, such as incremental-file and volume-image backups, media integrity scanning, file system validate and repair and file undeletion.

X-Drive base prices range from $319 for a 42MB drive to $369/85MB, $459/127MB and up to $1229 for a 525MB drive. Other drives and removeables can be purchased at the same time or later at discount.

MegaBuff
Sequential Systems
1200 Diamond Cir.
Lafayette, CO 80026
(800) 759-4549

MegaBuff is a megabyte buffer and LocalTalk Option board for the ImageWriter II printer. In serial mode, it supports data speeds up to 57,600 baud; in network mode, up to four computers at once can be buffering data in MegaBuff.

MegaBuff now ships with a high-speed 57,600 baud port driver for Apple IIGS. The port driver directly accesses the serial chip in the Apple IIGS for 57,600 baud access with no overhead. The company stated that a sample four-page AppleWorks GS word processor file that printed in a minute and a half with MegaBuff using the standard port driver spooled to the printer in only 30 seconds the new high speed port driver. Because the driver directly accesses the IIGS serial port, an expansion card can be put into slot 1.

Sequential System's MegaBuff is available from Resource Central for $159.

TypeSet
WestCode Software, Inc.
15050 Avenue of Science, Suite 112
San Diego, CA 92128
(619) 487-9200

TypeSet is a three-part TrueType font management New Desk Accessory. It creates a "What-You-See-Is-What-You-Get" font menu that presents all TrueType fonts in their own typeface, either in 10 or 12 point size. It also allows users to customize various font sets for use with separate applications to control the number of fonts in the font menu, making font selection easier and reducing clutter. TypeSet also allows users to generate fonts reports—displaying on-screen or printing: a font's character set, keystroke equivalents for typing extended characters, "line showings" and examples of the font in various sizes. Westcode says reports are "perfect for building a ...personal font catalog."

TypeSet was produced by Steven Disbrow and Joe Wankerl of EGO Systems, publishers of *GS+* and authors of the popular EGOed text editor. TypeSet requires 1.25 MB RAM, GS/OS System 5.0.4 or later and Pointless 2.0 or later and has a suggested retail price of $49.95.

SAP 0.7
Kenrick Mock
2300 Sycamore Lane, #18
Davis, CA 95616-5511
Internet: mock@cs.ucdavis.edu GEnie: k.mock

SAP for "Simple Animation Program," is a freeware animation program designed after Baudville's "Take-1" program for the IIe.

While even the author regards it as "user hostile," the program in its 0.7 beta release version supplies a low cost tool for would-be animators and users wanting to make simple interactive presentations.

To use the program, you'll need a paint program that saves in the Apple Preferred Format (APF is a common picture file format), a text editor, and at least 1.25 MB RAM. Two or more megabytes are recommended, as is a hard drive and accelerator.

The program isn't desktop based, so you'll have to get used to bouncing between a text screen and the graphic screen you work on.

Basically, you have to draw out your background and any "actors" you'll be using in your own paint program first. Save these files in SAP's "pictures" folder, as the program only recognizes files in certain folders.

To make actors, which can be anything you want to move around the screen (e.g. characters, foregrounds, text), you'll paint the various elements side by side in APF picture files. One of the three separate programs in SAP is designed to "rope-off" the separate actors.

Once that's done, you go to another program to design how you want actors to move around on backgrounds, creating separate frames that collectively make up scenes. In addition, standard uncompressed sound files and SoundSmith songs can be incorporated into animations.

You'll then need a text editor to write a simple script of how you want the scenes displayed. Use the third 'projector' program to execute the script and perform the movie.

Version 0.7 of SAP allows for large movies to continue onto different disks. Mock says, "The advantage is you won't need to quit and re-run the projector on a different disk to continue a long movie—old Take-1 movies made you 'Flip the disk and Reboot' to continue."

In addition, the 0.7 revision (upgraded from from version 0.5) brings a more hypermedia-like control system. New GOTO functions in scripts allow users more control in making interactive presentations.

Anyone viewing an animation can (via the keyboard, a touchscreen or other input device) affect the animation by changing the current scene. That makes interesting new applications for the program.

SAP still has some significant limitations ("It's kind of slow," Mock says—the program is written in a lot of C), but being freeware, it offers users an inexpensive way to get creative. Mock only asks users to send him a copy of works they create—he calls it "show-ware."

SAP 0.7 is available from various online services, along with a companion disk that serves as an example of interactive animations created with the program.

Floptical clarifications

In last month's End Notes, we published a short article entitled "Using the floptical drive." In the piece, we noted that "driver software for the InSite Mechanism was written for Applied Engineering" by Richard Bennett. While Bennett did write a driver, it was not expressly "for" AE, but rather freeware written because AE does not provide IIGS driver support. Thanks to Bennett for the clarification.

Bennett, in the documentation of his driver, states the reason for working on the driver: "Five of us from Sydney, Australia, attended the 1992 KansasFest (good decision), and four of us purchased SCSI Floptical drives (good decision) by Applied Engineering (bad decision) from LRO (bad decision)." The drives weren't supplied with any driver software, so Bennett set out to write it himself.

Bennett's driver is for the InSite Peripherals I325 VM mechanism. In the driver documentation, Bennett states that the standard mechanism supports nine different storage sizes across three different types of media. Bennett lists the nine low-level formats as:

Double Density, 256 bytes per sector	640K
Double Density, 512 bytes per sector	720K
Double Density, 1024 bytes per sector	800K
High Density, 256 bytes per sector	1280K
High Density, 512 bytes per sector	1440K
High Density, 1024 bytes per sector	1600K
Very High Density, 256 bytes per sector	18.1MB
Very High Density, 512 bytes per sector	19.8MB
Very High Density, 1024 bytes per sector	20.4MB

The floptical driver supports DD, HD and VHD disks all at 512 bytes per sector. Note that the 800K format option is an MFM format, and would not be the same as the 800K GCR format used in the Apple 3.5" and UniDisk 3.5" drives. (No format provides the 21 MB capacity the drive is advertised as having.)

Bennett's driver is available on a variety of BBSs. You can contact the author on AppleLink or Internet: AUST0391@AppleLink.Apple.COM or via snail mail at:

Richard Bennett
PO Box 271
Turramurra NSW, 2074 AUSTRALIA

Pointless and System 6.0.1

The new System Software release for the IIGS brings welcomed bug fixes and minor enhancements, but any modification of the operating system holds the potential for problems. One problem report is related to Westcode Software's popular Pointless font utility: the system may crash while making selections in a standard Choose Font Dialog.

Westcode found the source of the conflict in Apple's bug fixes in the Font Manager. Apple fixed errors that previously caused the Choose Font Dialog to show redundant font sizes in the size menu, as well as making changes to allow the size menu to accommodate 96 different sizes per font.

The system only crashes when a TrueType font family is selected from the Choose Font Dialog, and only when that family has no related bitmap font available. According to our tests, choosing fonts from menus will never make the system crash. In addition, if a font family (e.g. Times or Helvetica) has any bitmapped size available to the system, choosing it will not cause a problem. An obvious solution is to save a single bitmapped version for each TrueType family (Pointless will create bitmap fonts of any size from a TrueType font).

Another solution that has been suggested is using the old Font Manager from System 6.0; this can be done by replacing 6.0.1's Tool027 with the tool from 6.0's set. Some users have reported no problems from this operation; however, Apple discourages the mixing of old and new System Software components.

If the thought of creating scores of bitmaps for all of your TrueType families—or disobeying Apple—seems like too much, take a passive approach to avoiding a crash. Simply select a small block of text and then choose a desired font family from the pull down menu. From that point, the family will be "safe" to select from the Choose Font Dialog.

Lunatic E'Sex's KanasFest Report

The 5th annual A2-Central Summer Conference ("KansasFest") is off to quite a start! On Tuesday night all the GEnie Apple II sysops arrived, plus Richard Bennet and Linda Harding. Along the way, A2Pro sysops Dave Miller ([GEnie address] JUST.DAVE) and Nathaniel Sloan (C.SLOAN, aka "Sloanie") were in a traffic accident, totalling Dave's car. Luckily they got away with only a few scrapes and bruises, and a few of the other sysops went off and picked them up.

On Wednesday during the day we had our GEnie sysop meetings, working on ways to bring even more Apple II inforation to GEnie and make the Apple II RoundTables an even better place for Apple II people to be. Over the next few months you'll be seeing some of the results of our efforts, in all areas of the A2 RTs, and I think all the Apple II users here are really going to like what we've got coming up. Further details will be made available as we finalize each plan. Later on Wednesday the rest of the conference attendees showed up, and we all spent a lot of time hanging out and chatting and hacking, etc. late into the night (I got about three hours sleep, last night! I'm not sure where I fit it in, but it was there somewhere. About an hour of it was me missing breakfast.). There are about 100 attendees here, this year. I'm not about to type in all their names, but rest assured that everyone who is anyone in the Apple II world is here! Some of the companies that have representatives present are: Alltech Electronics, Big Red Computer Club, Bright Software, Byte Works, Inc., DYA/DigiSoft Innovations, Econ, GEnie Apple II RoundTables, GS+ Magazine, JEM Software, Kitchen Sink Software, Parsons Engineering, Procyon, Inc., Quality Computers, Resource Central, Roger Wagner Publishing, Sequential Systems, Shareware Solutions II, and Softdisk Publishing. There's also lots and lots of individual developers and users here.

Today, Thursday, was the start of KansasFest proper. In the morning there was an opening talk by Tom Weishaar, Uncle-DOS himself. After welcoming everyone to the conference and saying a few opening words, Tom presented a few "awards" to the people who have been able to come to every single KansasFest yet held. Ken Kashmarek got a special award of recognition for being the only person to have come to all KansasFests so far who actually paid full

price for all of them! Next, Tom actually went out into the auditorium with the microphone and went to each audience member in turn, asking them to introduce themselves and say a few words about who they were and why they had come to KansasFest. This was the first time anything this had ever been done, and it was quite fun. Next we had the keynote address by Mike Westerfield, talking about "Amateur Programming for Fun and Profit." It was very informative, giving advice and suggestions to all the programmers, developers, and would-be programmers and developers in the audience.

Following Mike Westerfield was Bill "Burger Bill" Heinemann, giving us all an update on the status of the Avatar project. Currently, the Avatar itself is stalled for lack of funding, since their major financial backer pulled out. Bill said that most of the design work has already been finished, especially on the hardware, and they're mainly waiting on some capital to get the whole thing rolling. In the meantime, they've been working on an Apple IIgs clone computer interface for Super Nintendo game systems! This would be a $299 to $399 plug in device for the Super Nintendo that would turn it into an Apple IIgs clone computer. A beta or prototype is already working, according to Bill. It has not been named yet.

The device would come with 2 MB of RAM on board, an "IBM style" floppy disk drive (720K and 1.44 MB only, no 800K support due to cost consideratons), and an external interface port (it would be either a regular Apple II slot, or a PCMCIA slot—an optional card cage could be added to give more interfaces). The keyboard would be a standard "IBM style" keyboard with Super Nintendo connectors, plugged into the joypad/joystick port(s). To use a mouse you would have to purchase Super Mario Paint and use the mouse included with that (Bill said there's no way he could include a mouse or sell his own and compete with the price). Alternately you could use the Super Nintendo's joypad, but he said that it was very awkward.

The beta/prototype of this device uses the ROM code for GS emulation that Bill is developing for the Avatar. He has gotten some assistance from Laser Computer (like a sheet of arond 50 memory entry locations), so this device will be at least as compatible in 8-bit Apple II mode with a real Apple II as Laser computers are. Bill said that he has been able to get HyperStudio to run on the beta/prototype just fine, but ran into problems with Teach from System 6.0, and again even more problems with Teach from System 6.0.1. One problem with this device is that the Super Nintendo screen mode resolutions are different from those of the Apple IIgs. It has four screen modes: 256x224, 256x448, 512x224, and 512x448. Emulating a IIgs, you either lose some screen real estate, or you use a "squeezed" mode with looks "really ugly," according to Bill. The speed of the device was reported to be about twice the speed of a stock unaccelerated Apple IIgs. The only Super Nintendo hardware features Bill reported using for the IIgs emulation were some DMA memory moving routines and sprite animation for the cursor.

In its original design, Bill reports the device would easily be able to copy Super Nintendo cartridges onto a floppy disk (in fact he said it already can). He is seeking approval from Nintendo for the device, though, which would necessitate disabling that feature in hardware, for copyright reasons. (Bill's written plenty of Super Nintendo games himself, so people could even be pirating his own works! :) No beta/prototype hardware or photos of such were available to actually be shown.

There were no special activities at lunch on Thursday, but there is entertainment scheduled for lunch on Friday. After lunch the normal sessions began. This year, there are only two tracks of sessions, instead of the three or four of the past few years. Sessions on Thursday were generally organized into an "8-bit" track and a "16-bit" track. The sessions in one were: "System II: The Complete Graphical Interface for the Apple II (8-bit)," "Programming with System II from Applesoft and Assembler," "Integrating Applesoft and Assembly" and "The Apple II & Eduction: The HyperStudio Approach." The other track's sessions were: "A Dieter's Guide to Hi-Speed Data Compression," "The Latest & Greatest Advanced Sound Techniques with the Ensoniq 5503," "Fun & Easy: Writing Twilight II Modules" and "Intermediate Desktop Programming." On Friday the sessions are much less easily divisable.

Thursday night in the cafeteria was the Creative Black Tie Celebration and Celebrity Roast. Part of the "celebration" was inspired by Roger Wagner's traditional unique ties—a contest was held to see if anyone could match or beat Roger's taste in ties (I won the "Most Colorful" prize, for my black leather bow tie.:) The "roastee" of honor after that was Tom Weishaar, head of Resource Central and all-around swell guy. The "roasters" were Dennis Doms, Dean Esmay, HangTime, Roger Wagner, and Matt Deatherage (with help from Tara Dillinger). Any description I could write here would simply not do the roast justice, so I'm not even going to try! I'm sure videotapes will be made available by the various groups taping the event, such as GS+ Magazine, Resource Central, and others, so you can just get the tape and see it all for yourself.

Late Thursday night there were some rather amusing antics being performed in one of the dorm lounges, as a group of Apple II developers, including Roger Wagner, played a game were each person in turn had to grab and pick up a paper grocery bag in their teeth, while only touching the ground in one place. After everyone had made an attepmt, the bag was shortened a few inches and they went around again. At the end it got down to just a single flat piece of paper with a few frayed edges sticking up. It was quite a sight. Around the time that was ending up, a couple of people pulled out Aerobee™ flying rings and started sailing them back and forth to each other down the tic tac toe board-like halls (the lounge is in the middle). One was making a clockwise circuit and the other was making a counter-clockwise circuit. Everyone not involved dodged and ducked their heads as they went from room to room. (:

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Lunatic notes: "This message was originally posted to the Apple II RoundTables on GEnie. It may be reposted and reprinted anywhere as long as the entire message including this notice and the copyright notice remain intact."

End Notes

Apple waffles—so much for consistency

A standard GS/OS Directory Dialog (also called a "Standard File") provides users a button to change volumes. Over the generations of system software, the button's function has changed: previously, the button switched the current disks; currently, the button displays all online devices available so that the user can choose a disk to view.

Apple first labeled the button "Disk," but with the introduction of System 5, Apple decided that "Volume" would be a more appropriate designation for the button.

Shortly later, Apple added a pull down menu to the current folder name. It displays all folders in the current path, the current drive and "Volumes," a selection that displays the same device lineup as the Volume button. What is interesting is that with the new 6.0.1, Apple has switched back to using the label "Disks" in this pull down menu and "Disk" for the button (both still perform the same function).

While changes to standard selectors like the Directory Dialog generally don't affect applications, AppleWorks GS—as static as it is—has had a hard time keeping up with Apple's waffling nomenclature. AWGS was released with System 5; the program has some customized Directory Dialogs, so documentation stated that the change from "Disk" to "Volume" wasn't going to be consistent; some dialog buttons were labeled Disk, others Volume. A later revision of AWGS made the change to Volume consistent.

In any case, with 6.0.1, AWGS now uses Volume for the button, while the system-created pull down menu says "Disks". Just another reason for Claris to update AWGS, albeit highly unlikely.

To compare notes, Apple also changed the button on the Macintosh—from "Drive" to, for System 7, "Desktop". The System 7 Mac is very Finder-centric. Selecting on Desktop shows the items on the Finder desktop, (including the Trash—although it isn't selectable).

Only for the really needy

Finding your Apple II a little too practical? Why not bang out the bucks for more computing power than you'll ever need? Macs are still too expensive, and—like the more plain-jane ripoff, Windows—just don't captivate the same thirst for brute power as a UNIX workstation. Hold on—cheaper versions of the great UNIX-based operating systems are coming to a PC near you. Well, maybe.

NeXTStep, the operating system of Steve Job's NeXT computer, and Solaris, from SunSoft, are moving into PC land. NeXT gave up with hardware and is putting their resources into selling software. NeXTStep for Intel requires at least a 486DX with at least 8MB of RAM—or 16MB to operate in color, with 24 MB recommended. Then too, you'll need 120 MB of free hard drive space to accommodate a full system installation.

Solaris only requires a 33 MHz, 386DX with math coprocessor and 12 MB RAM, but they likewise recommend a 486DX with 16 MB. You'll also need a CD-ROM drive, as that's how the operating system is distributed.

While the hardware savings compared to buying a full-fledged workstation would be considerable, just the Intel-level operating system software for either NeXTStep or Solaris goes for a whopping $795. Kind of makes you appreciate the price of our system software.

Quality Computers to 'upgrade' AppleWorks

Quality Computers recently send out advertising stating the company "has come out with a new program, The Works 4.0." It's designed to upgrade features in AppleWorks 3.0; plans include three separate clipboards for the WP, SS and DB modules (for 36 open files at once); mouse support; expanded printer support and many detail additions.

Randy Brandt, a former Beagle Brother who worked under Claris to produce AppleWorks 3.0, is working for Quality to produce the enhancement product. Codenamed "Quadriga," the project began earlier this year, but "there's still a lot to do," says Brandt. In the meantime, of course, Quality is taking orders. Their ad states, "you to [sic] can be part of this exciting upgrade."

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